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EDUCATION REGARDING CREDIT FOR AGRICULTURAL PRODUCTION.

REPORT NO. 2, SURVEY OF TEACHERS OF AGRICULTURE.

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TWENTY ILLINOIS AGRICULTURE TEACHERS WHO HAD RECEIVED 3 DAYS OF INTENSIVE INSTRUCTION IN FARM MANAGEMENT INCLUDING THE USE OF CREDIT AND 64 RANDOMLY SELECTED AGRICULTURE TEACHERS WITH MORE THAN 1 YEAR OF TEACHING EXPERIENCE IDENTIFIED STUDY AREAS BEING TAUGHT WHICH RELATED TO THE USE OF AGRICULTURAL PRODUCTION CREDIT AND EDUCATIONAL REFERENCES AND TEACHING AIDS BEING USED IN HIGH SCHOOL AND ADULT PROGRAMS. THE PURPOSE OF THE SURVEY WAS TO PROVIDE INFORMATION FOR DEVELOPING INSTRUCTIONAL UNITS FOR TEACHING AGRICULTURAL PRODUCTION CREDIT. ON THE BASIS OF INFORMATION COLLECTED, FOUR UNITS OF INSTRUCTION WERE DEVELOPED--DETERMINING (1) THE PRESENT SITUATION, (2) WHERE TO USE CREDIT FOR CROPS AND LIVESTOCK, (3) WHERE TO USE CREDIT FOR BUILDINGS, MACHINERY, AND EQUIPMENT AND (4) HOW TO USE CREDIT. IN COMPARING THE TWO GROUPS OF TEACHERS, 75 PERCENT OF THE SPECIALLY PREPARED GROUP AND 18.7 PERCENT OF THE RANDOMLY SELECTED GROUP HAD ADULT EDUCATION CLASSES WITH FARM MANAGEMENT. DIFFERENCES BETWEEN THE RANDOMLY SELECTED GROUP AND THE SPECIALLY PREPARED GROUP IN NUMBER TEACHING THE PREPARED INSTRUCTIONAL UNITS IN HIGH SCHOOLS WERE NOT SIGNIFICANT. ALL FOUR INSTRUCTIONAL UNITS WERE TAUGHT IN APPROXIMATELY 30 PERCENT OF THE ADULT PROGRAMS WITH SPECIALLY PREPARED TEACHERS AND IN APPROXIMATELY 20 PERCENT OF THOSE WITH THE RANDOMLY SELECTED TEACHERS. IT WAS CONCLUDED THAT MANY FARMER AGRICULTURAL PRODUCTION CREDIT PROBLEMS COULD HAVE BEEN AVOIDED OR MADE EASIER TO HANDLE THROUGH MORE ADEQUATE EDUCATION IN FARM MANAGEMENT IN HIGH SCHOOL AND ADULT CLASSES. INSERVICE TRAINING FOR TEACHERS AND NEW INSTRUCTIONAL MATERIALS ON THE USE OF AGRICULTURAL PRODUCTION CREDIT ARE NEEDED. (WB)

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EDUCATION REGARDING CREDIT FOR AGRICULTURAL PRODUCTION

Report No. 2

Survey of Teachers of Agriculture

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Production Credit Associations of Illinois  
Federal Intermediate Credit Bank of St. Louis

May 1967

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## PREFACE

This publication is the third in a series of publications resulting from a comprehensive research project being conducted by the Agricultural Education Division, University of Illinois, relating to education regarding credit for agricultural production. This research project is being partially supported by the Illinois Production Credit Associations and the Federal Intermediate Credit Bank of St. Louis.

The information in this report is of special concern to persons responsible for conducting systematic programs of education regarding the use of credit for agricultural production. The findings of this phase of the research will be translated, as the project progresses, into educational programs appropriate for all lenders and users of agricultural production credit.

Lloyd J. Phipps  
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Gerald R. Fuller  
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## I. SUGGESTIONS FOR USING THIS REPORT

Perhaps the most valuable aspect of this report is its appropriateness for use by persons who have a responsibility for planning and conducting comprehensive programs of education regarding the use of credit for agricultural production. For agricultural production credit, the report identifies four units of instruction and the specific or detailed areas of content associated with each of these units. It also provides an overview of the extent to which these units and areas of content were being taught in high school and adult education programs of agriculture in Illinois.

Two important uses of this report are described below. First, individuals responsible for planning and conducting ongoing educational programs relating to agricultural production credit can compare the units of instruction and the detailed areas of content described in this report with the content of their existing courses. Where a new program of instruction relating to agricultural production credit is being initiated, this report may assist the teacher in identifying instructional materials and content for inclusion in his program of instruction.

The second use of this report involves the lay citizens serving as (1) members of advisory committees for schools or (2) directors of agencies providing credit for production agriculture. Members of these committees and boards of directors could be furnished with a copy of the report for their review. A local teacher or credit agency manager could allocate all or part of several meetings to the discussion of the implications of the report. At these meetings, the need for and objectives of an educational program regarding the use of production credit could be discussed. Long-range plans could be developed whereby the educational needs identified in this report would be met through an action program. A procedure for reviewing the effectiveness of the implemented action program would also need to be established.

Individuals will find additional uses for this report. The preceding suggestions are provided only as suggestions and should not be considered an exhaustive listing of possible uses of this publication.

## II. PURPOSE OF SURVEY

Illinois teachers of vocational agriculture were surveyed regarding local educational programs offered high school pupils and adults to identify: (1) the areas of study being taught which relate to the use of credit for agricultural production and (2) the educational references and teaching aids being used.<sup>1/</sup> It was the purpose of this survey to provide information that could be used in: (1) developing source units to help teachers and others improve instruction regarding the use of credit for agricultural production and (2) improving and developing educational references and teaching aids to assist in effective teaching.

<sup>1/</sup> The following report was published as the result of this survey: Education Regarding Credit for Agricultural Production, A Partial Listing of References and Teaching Aids Being Used by Illinois Teachers of Agriculture, Production Credit Associations of Illinois and Federal Intermediate Credit Bank of St. Louis, May 1966, 12 pp. (Available from University of Illinois Agricultural Education Division.)



### III. PROCEDURE USED

The advisability of the survey, its purposes and the use of the findings were discussed at a meeting of the project's research Advisory Committee and the principal investigator was authorized to develop a survey form. This was done and the draft of the survey form was reviewed by the Advisory Committee members. The suggestions of the committee were incorporated into the final instrument.

Two groups of Illinois teachers of agriculture were surveyed. Survey forms were mailed to 20 teachers who had received three days of intensive instruction regarding the teaching of farm management, including the use of credit. In addition survey forms were mailed to a random sample of 100 teachers drawn from the remaining teachers of agriculture who had taught more than one year. A 100 percent response to the mailed survey was obtained from the specially prepared group and 64 percent response from the randomly selected group. The Appendix contains a copy of the survey form used.

Four units of instruction were developed to include the detailed areas of content about which the Illinois teachers of agriculture were surveyed. The findings from the specially prepared group were compared with the findings from the randomly selected group. The responses were also summarized for high school programs and for adult education programs.

### IV. UNITS OF INSTRUCTION AND AREAS OF CONTENT

The problem areas or units of instruction referred to in this publication and the detailed areas of content included in each are as follows:

#### Unit I--Determining the Present Situation

1. Inventorying resources of the farm business
2. Recording farm business receipts, expenses, production, and so forth
3. Analyzing farm business records and interpreting results
4. Preparing and interpreting a farm income statement
5. Preparing and interpreting a net worth statement
6. Determining amount of working capital available based upon the net worth statement

#### Unit II--Determining Where to Use Credit for Crops and Livestock

1. Planning profitable cropping systems
2. Planning profitable livestock enterprises
3. Preparing a partial budget to determine profitability of borrowing money to increase volume of livestock enterprise
4. Preparing budgets to determine profitability of borrowing money to buy or rent farm land

#### Unit III--Determining Where to Use Credit for Buildings, Machinery, and Equipment

1. Preparing a partial budget to determine profitability of borrowing money to purchase new farm machinery or equipment
2. Estimating new cost and annual costs of buildings
3. Preparing a partial budget to determine profitability of borrowing money to construct new buildings, repair or remodel an older building
4. Projecting returns from buildings to the business

#### Unit IV--Determining How to Use Credit

1. Planning where to invest dollars in the farm business to obtain highest returns
2. Preparing to seek credit for agricultural production
3. Determining a repayment plan for the agricultural production credit obtained
4. Providing for sufficient money to meet emergency business and family needs
5. Preparing a farm business and family living cash flow budget

#### V. MAJOR FINDINGS

By definition, all of the schools in the survey conducted high school programs of agricultural education. However, it was found that all of the schools had not conducted adult education programs in agriculture during the year the survey was made.<sup>2/</sup> Graph I illustrates in broad terms, the extent to which adult education in agriculture occurred in the randomly selected group and in the specially prepared group. Graph II illustrates the degree of emphasis placed on the four problem areas or units of instruction at the high school level as well as at the adult level by each group of teachers studied. Graphs III through VI show the degree of emphasis placed upon each detailed area of content within a major problem area or unit of instruction by each of the two groups of teachers surveyed.

One of the objectives of the survey was to determine whether or not differences existed between the randomly selected group which had had no special preparation in teaching farm management including agricultural production credit, and the specially prepared group which had taken a short course in teaching farm management and agricultural production credit. Therefore, comparisons of findings between the randomly selected and the specially prepared group have been presented as well as comparisons of findings relating to the high school and adult levels of instruction.

The chi-square statistical test for significance was applied to the data presented. Results of this test, which indicate the probability that differences between groups could not have occurred by chance, are given in those instances where they were significant (five percent level or below).

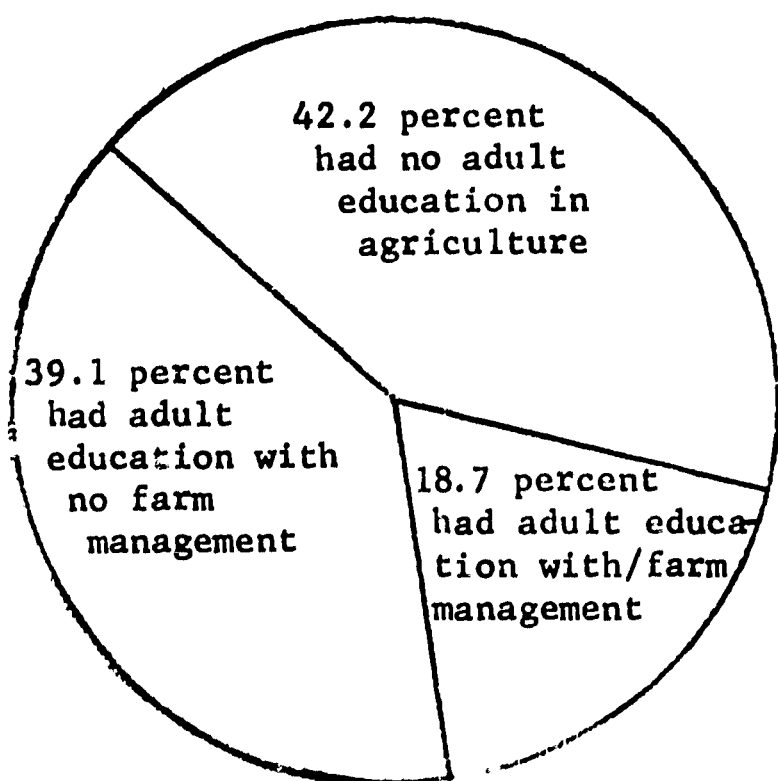
#### Graph I, Analysis

Graph I shows the extent to which adult education courses were taught by the randomly selected group of teachers and by the specially prepared group. The schools which offered adult education in agriculture courses were further divided to show the proportion having courses with the title of "farm management." It was found that removal of data for schools having "no farm management" had, for all practical purposes, no effect on the summary data regarding adult education. For this reason, the analysis of the data in the following graphs was based upon all schools with adult education programs.

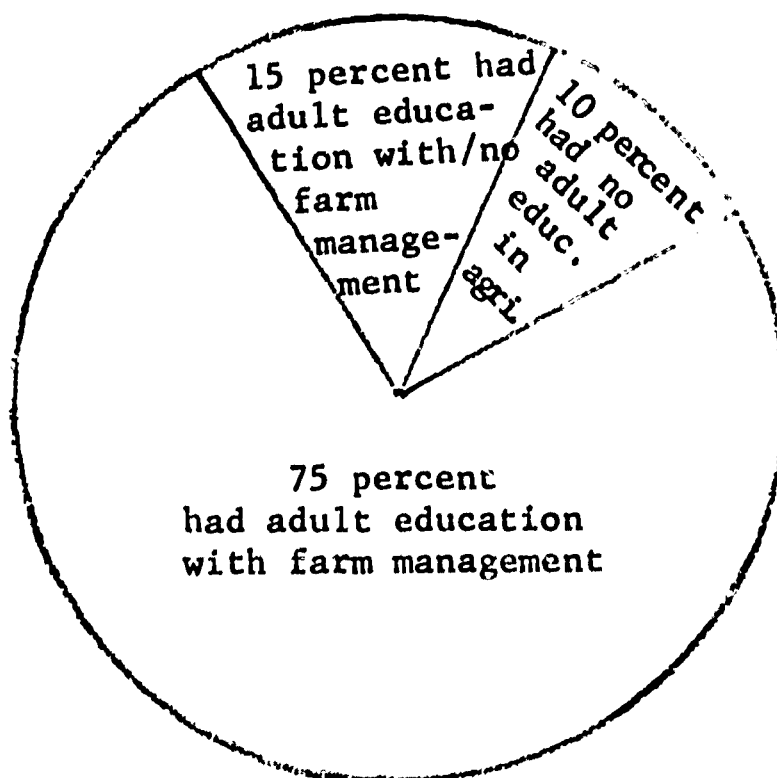
<sup>2/</sup> Only schools that reported adult education in agriculture were included in the analysis of the instruction offered at that level.



Graph I--Percentages of Schools Teaching Adult Education Courses in Agriculture, by Groups



Randomly selected group  
(N=64)



Specially prepared group  
(N=20)

In the randomly selected group of teachers, 57.8 percent of the schools conducted adult education courses. However, 90 percent of the schools in the specially prepared group taught adult courses. Chi-square test results showed that the difference in the data for randomly selected group and the specially prepared group could have occurred by chance less than one time out of 100.<sup>3/</sup>

A still greater difference existed between the randomly selected group of teachers and the specially prepared group of teachers with respect to the number teaching "farm management" courses. Only 18.7 percent of the teachers in the randomly selected group taught or coordinated the teaching of "farm management" to adults as compared to 75 percent for the specially prepared group. Chi-square analysis indicated that this difference could have occurred by chance less than one time out of 1,000.<sup>4/</sup>

#### Graph II, Analysis

Graph II shows the degree of emphasis which the randomly selected group of teachers and the specially prepared group of teachers placed upon the teaching of all areas of study in the four problem areas or instructional units. Percentages shown in this graph are averages of the data in Graphs III through VI.

High school program. In Graph II, the percentages for each of the instructional units taught at the high school level are relatively high when compared to the percentages for the adult program. The four instructional units were taught to high school pupils in one-half to three-fourths of the schools in both the randomly selected group and the specially prepared group.

Units I and II, "Determining the Present Situation" and "Determining Where to Use Credit for Crops and Livestock," were taught to high school pupils in 70 and 79 percent of the schools surveyed. Unit III, "Determining Where to Use Credit for Buildings, Machinery, and Equipment" and Unit IV, "Determining How to Use Credit," were taught to high school pupils in 51 and 60 percent of the schools.

Differences between the randomly selected group and the specially prepared group were minor for each instructional unit.

Adult program. In Graph II, the percentages for each of the instructional units taught at the adult level are relatively low. No unit was taught to adults by more than one-third of the schools conducting adult education in agriculture programs.

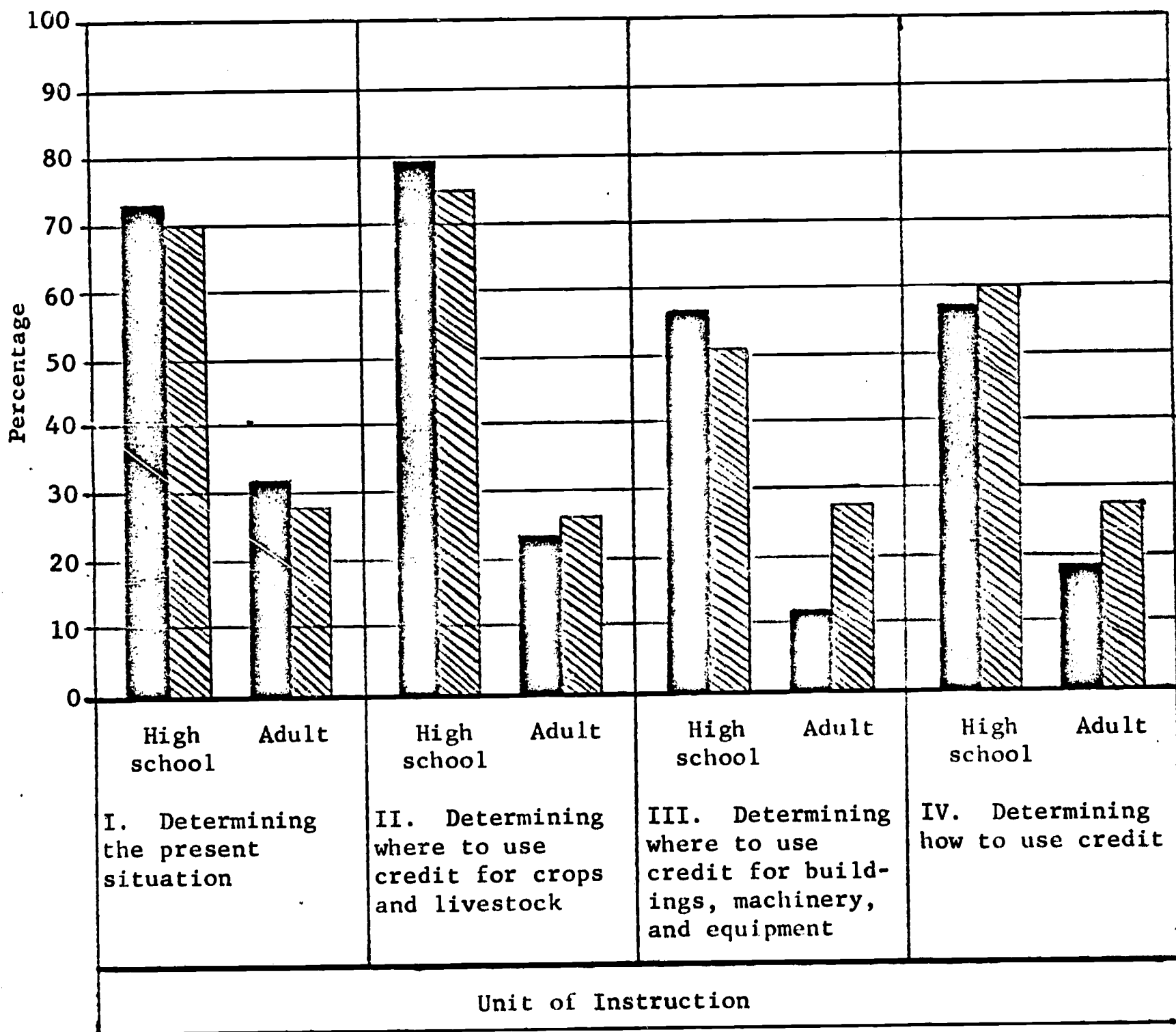
At the adult education level, the differences in the degree the four units of instruction were offered was slight, the range being from 26.5 to 28 percent.

The percentage of the randomly selected group of teachers teaching Units III and IV, "Determining Where to Use Credit for Buildings, Machinery, and Equipment" and "Determining How to Use Credit," was considerably less than the percentage of the specially prepared group of teachers teaching these units. Unit III was taught in 11.5 percent of the schools in the randomly selected group and in 28 percent of

<sup>3/</sup> Chi-square equals 6.973. Significant at 1 percent or  $P < 0.01$  level.

<sup>4/</sup> Chi-square equals 12.544. Significant at .1 percent or  $P < 0.001$  level.

Graph II--Percentages of Vocational Agriculture Departments Teaching All the Detailed Areas of Content in Four Farm Management Units of Instruction, 1963-64, by High School and Adult Education Levels<sup>5/</sup>



Randomly selected group: (High school, N=64; Adult, N=37)



Specially prepared group: (High school, N=20; Adult, N=18)

<sup>5/</sup>For list of detailed areas of content see Appendix.

the schools in the specially prepared group. Unit IV was taught by 18 percent of the randomly selected group of teachers and by 28 percent of the specially prepared teachers.

### Graph III, Analysis

Graph III presents a detailed analysis of the content taught in Unit I, "Determining the Present Situation." The detailed contents for Unit I were (1) inventorying resources of the farm business, (2) recording farm business receipts, expenses, production, and so forth, (3) analyzing farm business records and interpreting results, (4) preparing and interpreting a farm income statement, (5) preparing and interpreting a net worth statement, and (6) determining amount of working capital available based upon the net worth statement.

High school program. Graph III shows that at the high school level the first three detailed areas of content in Unit I were taught in considerably more schools than were the last three detailed areas of content. It was found that 85 to 95 percent of the schools in both groups taught areas of content 1, 2, and 3, while only 35 to 72 percent taught areas of content 4, 5, and 6.

The areas of content taught least frequently were 4, preparing and interpreting a farm income statement, and 6, determining amount of working capital available based upon the net worth statement. These areas of content were taught in approximately 11.5 percent more randomly selected schools than schools where the teachers were specially prepared.

Adult program. Combining the randomly selected schools and the schools where teachers were specially prepared, it appears that approximately one-third of the schools surveyed taught areas of content 1 through 5 at the adult level. Only 15 percent of the schools taught area of content number 6 at the adult level.

Areas of content 1, 3, 4 and 5 were taught in more schools in the randomly selected group than in the schools with specially prepared teachers. Areas of study 2 and 6 were taught in more of the schools with specially prepared teachers than in schools randomly selected.

### Graph IV, Analysis

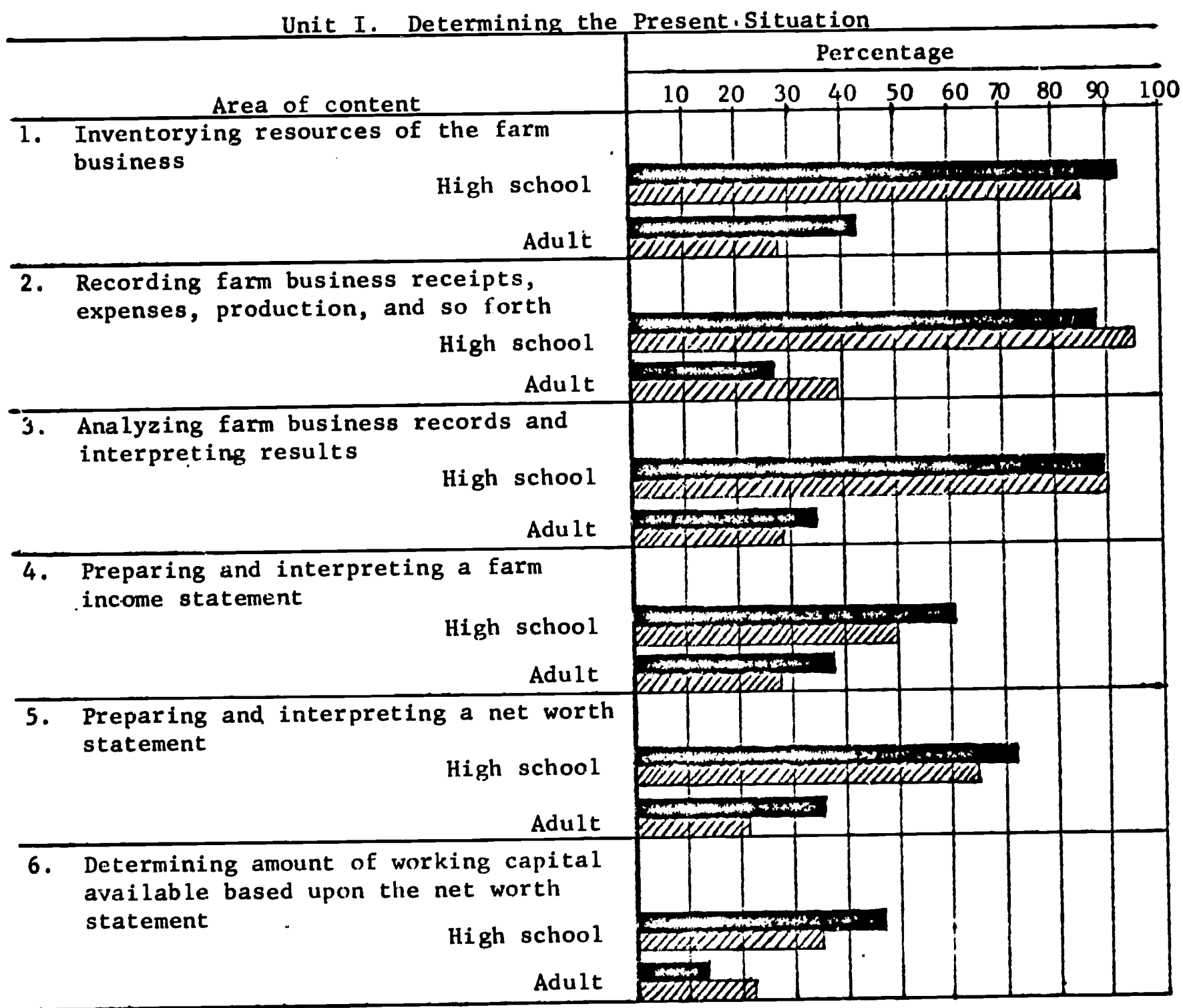
Instructional Unit II, "Determining Where to Use Credit for Crops and Livestock," is analyzed in Graph IV. The detailed areas of content in Instructional Unit II are (1) planning profitable cropping systems, (2) planning profitable livestock enterprises, (3) preparing a partial budget to determine profitability of borrowing money to increase volume of livestock enterprise, and (4) preparing budgets to determine profitability of borrowing money to buy or rent farm land.

Graph IV shows that at the high school level planning profitable cropping systems and planning profitable livestock enterprises were taught in a higher percentage of the schools than preparing a partial budget to determine profitability of borrowing money to increase value of the livestock enterprise and preparing budgets to determine profitability of borrowing money to buy or rent farm land.

At the adult level, when the randomly selected group and the specially prepared group were considered in toto, each of the four detailed areas of content in Instructional Unit II was taught in approximately 20 to 30 percent of the schools.



Graph III--The Percentages of Schools Teaching the  
Six Areas of Content in Instructional  
Unit I, in High School and Adult Programs



Randomly selected group: (High school, N=64; Adult, N=37)

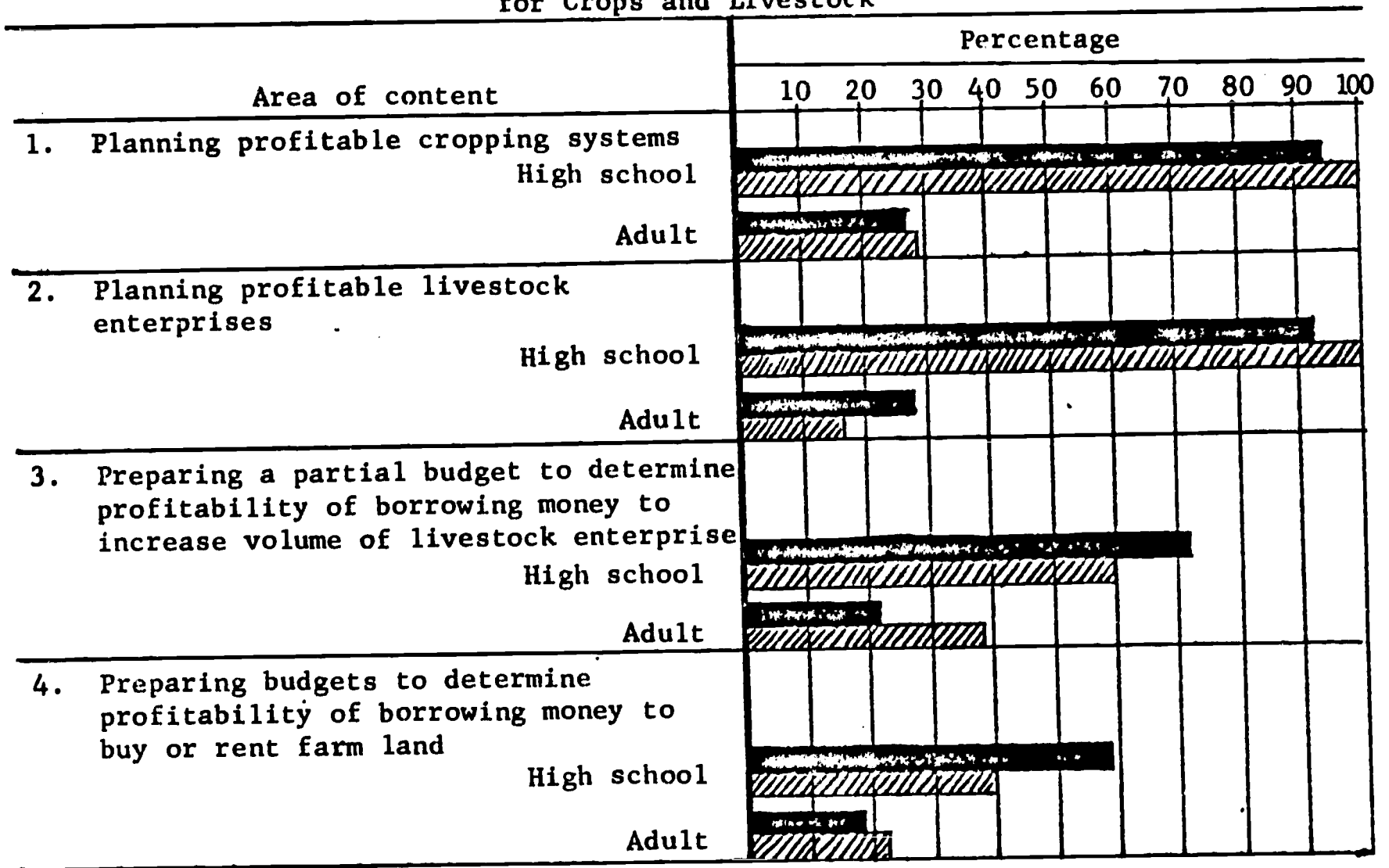


Specially prepared group: (High school, N=20; Adult, N=18)



Graph IV--The Percentages of Schools Teaching the Four Areas of Content Included in Instructional Unit II, in High School and Adult Programs

Unit II. Determining Where to Use Credit for Crops and Livestock



Randomly selected group: (High school, N=64, Adult, N=37)



Specially prepared group: (High school, N=20; Adult, N=18)

Area of content 2 was taught in more of the randomly selected group of schools than it was in the schools with specially prepared teachers. Areas of content 1, 3, and 4 were taught in more of the schools with specially prepared teachers than it was in the randomly selected schools.

#### Graph V, Analysis

Instructional Unit III, "Determining Where to Use Credit for Buildings, Machinery, and Equipment," which is analyzed in Graph V, consists of the following detailed areas of content: (1) preparing a partial budget to determine profitability of borrowing money to purchase new farm machinery or equipment, (2) estimating new cost and annual costs of buildings, (3) preparing a partial budget to determine profitability of borrowing money to construct a new building, repair or remodel an older building, and (4) projecting returns from buildings to the business.

The first two detailed areas of content were taught in more schools than were the last two detailed areas of content. Graph V shows that nearly 68 percent of the schools taught areas 1 and 2 while 25 and 55 percent taught areas 3 and 4.

Area of study 3, preparing a partial budget to determine profitability of borrowing money to construct a new building, repair or remodel an older building, and 4, projecting returns from buildings to the business were taught less frequently than the other two areas by both the randomly selected group and by the specially prepared group.

Areas of content 3 and 4 were taught in more of the schools with specially prepared teachers than in randomly selected schools.

At the adult level, area of content 1, preparing a partial budget to determine profitability of borrowing money to purchase new farm machinery or equipment, was taught in considerably more of the schools than any other area of content in Instructional Unit III.

All four areas of study were taught at the adult level in nearly twice as many of the schools with specially prepared teachers than in the randomly selected schools.

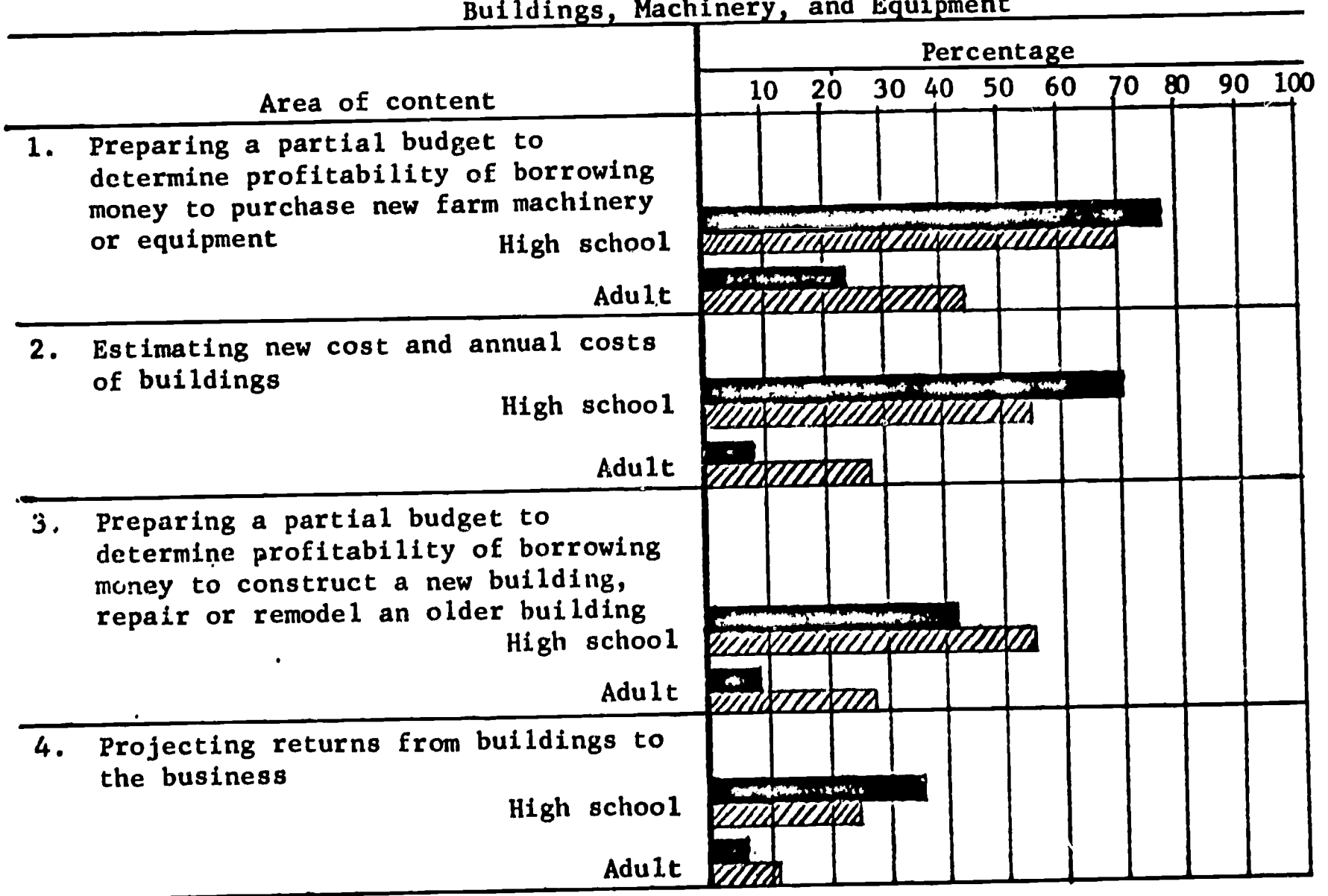
#### Graph VI, Analysis

Graph VI analyzes Instructional Unit IV, "Determining How to Use Credit." The areas of content included in this instructional unit are (1) planning where to invest dollars in the farm business to obtain highest returns, (2) preparing to seek credit for agricultural production, (3) determining a repayment plan for the agricultural production credit obtained, (4) providing for sufficient money to meet emergency business and family needs, and (5) preparing a farm business and family living cash flow budget.

The first two areas of content in Instructional Unit IV, planning where to invest dollars in the farm business to obtain highest returns and preparing to seek credit for agricultural production, were taught in the high school agriculture classes of over 70 percent of the schools studied. The latter three areas of content were taught in 40 to 60 percent of the schools studied.

Graph V--The Percentages of Schools Teaching the  
Four Areas of Content in Instructional  
Unit III, in High School and Adult Programs

Unit III. Determining Where to Use Credit for  
Buildings, Machinery, and Equipment



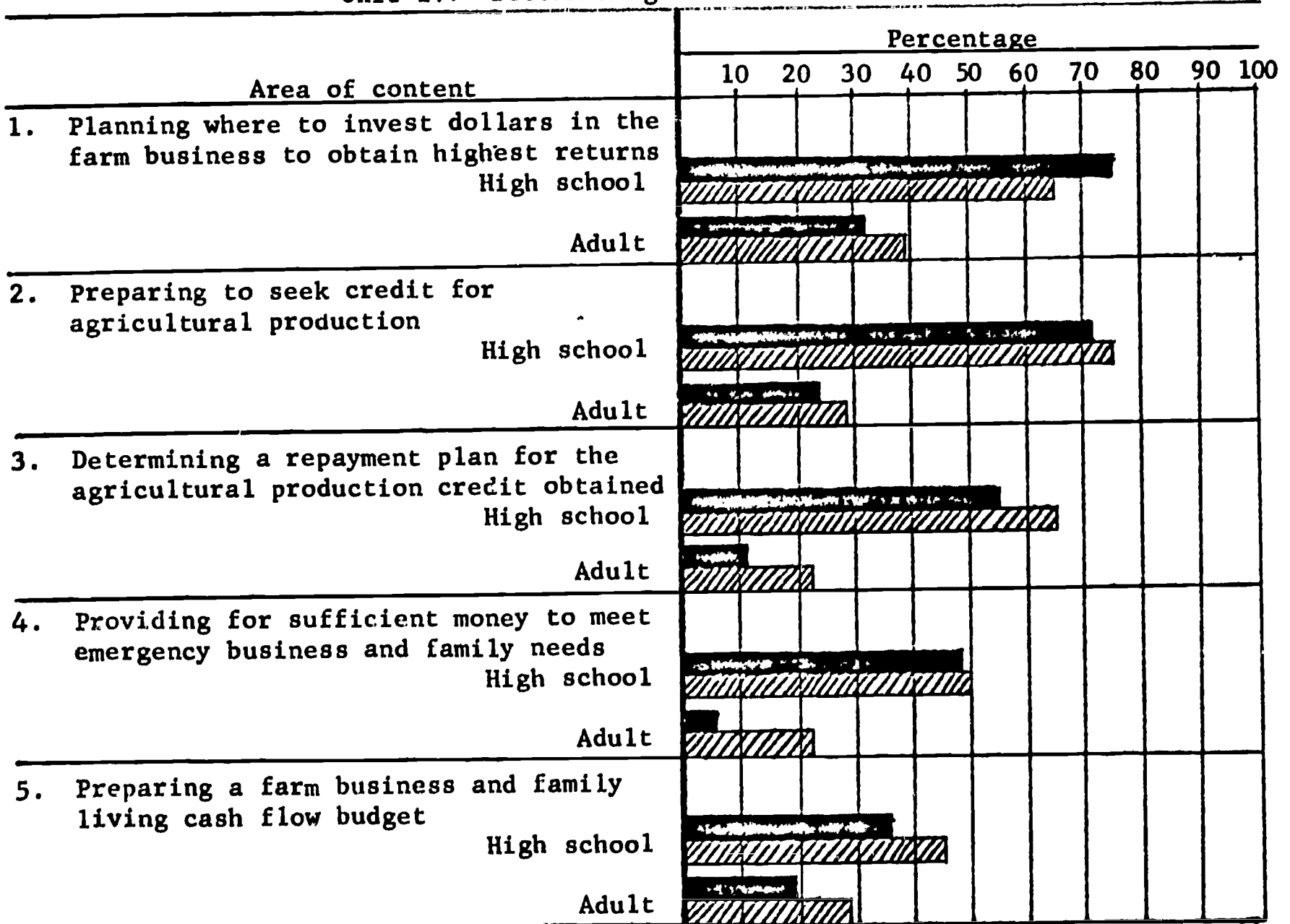
Randomly selected group: (High school, N=64; Adult, N=37)



Specially prepared group: (High school, N=20; Adult, N=18)

Graph VI--The Percentages of Schools Teaching the  
Five Areas of Content in Instructional  
Unit IV, in High School and Adult Programs

Unit IV. Determining How to Use Credit



Randomly selected group: (High school, N=64; Adult, N=37)



Specially prepared group: (High school, N=20; Adult, N=18)

The least frequently taught areas of content were (a) determining a repayment plan for the agricultural production credit obtained, (b) providing for sufficient money to meet emerging business and family needs and (c) preparing a farm business and cash plan budget. These areas of study were taught in a higher percentage of the schools with specially prepared teachers than they were in the randomly selected schools.

At the adult level, planning where to invest dollars in the farm business to obtain highest returns, and preparing to seek credit for agricultural production were taught most frequently. All five areas of content in Instructional Unit IV were taught in a higher percentage of the schools with specially prepared teachers than they were in the randomly selected schools.

#### V. SUMMARY AND CONCLUSIONS

On the basis of the data obtained in the survey of Illinois teachers of agriculture, it may be hypothesized that many of the problems farmers have in obtaining and managing agricultural production credit could have been avoided, or at least made easier to handle, through more adequate education in farm management in high school classes and in adult classes.

It was found that slightly less than 60 percent of the randomly selected schools with departments of vocational agriculture had adult education courses in agriculture, as compared to 90 percent of the schools with specially prepared teachers of vocational agriculture. This difference was statistically significant, perhaps indicating the effect of special preparation upon what is taught in the schools. The specially prepared group of teachers had significantly more adult courses with more "farm management" related titles than did the randomly selected group of schools. The findings also indicate that course content of adult courses may not be consistent with course titles.

Instructional Unit I, "Determining Present Situation," and Instructional Unit II, "Determining Where to Use Credit for Crops and Livestock," were taught more frequently at both the high school and the adult levels than were Instructional Unit III, "Determining Where to Use Credit for Buildings, Machinery, and Equipment," and Unit IV, "Determining How to Use Credit."

Instructional Units I and II were taught in approximately three-fourths of the high schools studied, whereas Instructional Units III and IV were taught in slightly less than 60 percent of the high schools studied. The differences obtained for the randomly selected group of schools and the group of schools with specially prepared teachers were not significant.

At the adult level, every unit of instruction was taught in less than one-third of the schools. However, each of the four instructional units were taught in approximately 30 percent of the schools with specially prepared teachers while they were taught in approximately 20 percent of the schools that were randomly selected. At the adult level, it appears from the findings that intensive preparation in the teaching of farm management may result in increased emphasis upon the teaching of the various content areas regarding agricultural production credit.

At the adult level, two factors may explain why the four instructional units relating to agriculture production credit received only slight attention. First, few adult courses on agricultural production credit were taught, and in the farm



management adult courses the emphasis was on methods of production instead of on the problem areas relating to agricultural production credit. Adult courses meet fewer hours per year than high school classes and the time available to teach regarding any one area such as agricultural production credit is a limiting factor.

This report does not imply that every area of content relating to agricultural production credit should be taught in every school. It is apparent, however, that many areas of content necessary for systematic instruction relating to agricultural production credit are taught in far too few schools.

## VI. RECOMMENDATIONS

On the basis of the findings presented in this report, the investigators make the following recommendations for the improvement of educational programs regarding agricultural production credit in high school and adult courses:

1. New teaching materials for the four instructional units outlined in this study need to be developed. Special attention should be given to Instructional Unit III, "Determining Where to Use Credit for Buildings, Machinery, and Equipment," and Instructional Unit IV, "Determining How to Use Credit."
2. Illinois teachers of agriculture need specially designed in-service training and other short courses concerning the teaching of farm management
3. In-service training and other short courses in farm management should give more attention to problems regarding the acquisition and use of agricultural production credit.
4. Illinois teachers of agriculture need to reevaluate the adequacy of their instructional programs of instruction regarding credit at both the high school and adult levels
5. Instruction relating to agricultural production credit in "farm management" courses, especially at the adult level, need to be initiated and expanded

APPENDIX

Part II. Instruction Regarding Agricultural Production Credit

Directions

1. For your high school program, indicate the approximate number of class periods allocated in your course outline for instruction associated with each area of study listed

2. For your adult and young farmer program, indicate the approximate number of class hours spent during 1963-64 and this year on instruction associated with each area of study.

3 Some areas of instruction may not be included in your program, if so leave the appropriate box or boxes blank

Areas of Study	Grade				Adults	Young Farmers
	9	10	11	12		
1. Inventorying resources of the farm business						
2. Recording farm business receipts, expenses, production, and so forth						
3. Analyzing farm business records and interpreting results						
4. Planning profitable cropping systems						
5. Planning profitable livestock enterprises						
6. Preparing a partial budget to determine profitability of borrowing money to purchase new farm machinery or equipment						
7. Preparing a partial budget to determine profitability of borrowing money to increase volume of livestock enterprise						
8. Estimating new cost and annual costs of buildings						
9. Projecting returns from new buildings to the business						
10. Preparing a partial budget to determine profitability of borrowing money to construct a new building, repair or remodel an older building						
11. Preparing budgets to determine profitability of borrowing money to buy or rent farm land						
12. Preparing and interpreting a farm income statement						
13. Preparing and interpreting a net worth statement						
14. Determining amount of working capital available based upon the net worth statement						
15. Preparing to seek credit for agricultural production						
16. Determining a repayment plan for the agricultural production credit obtained						
17. Providing for sufficient money to meet emergency business and family needs						
18. Planning where to invest dollars in the farm business to obtain highest returns						
19. Preparing a farm business and family living cash flow budget						
20. Others (explain on back of this page)						